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Professional Preparation

- 1968: B. Tech., Electrical Engineering, I.I.T. (Indian Institute of Technology)-Delhi, India.
- 1970: M.S., Electrical Engineering, University of Minnesota, Minneapolis, MN.
- 1974: Ph.D., Electrical Engineering, University of Minnesota, Minneapolis, MN.

Appointments

- Robinson Chair Professor, Department of Electrical and Computer Engineering, University of Kentucky, Lexington, KY, 2000-present.
- Director, Center for Nanoscale Science and Engineering (CeNSE), University of Kentucky, June 2007-June 2013, and July 2001-June 2005.
- Chairman, Department of Electrical and Computer Engineering, University of Kentucky, Lexington, KY, 2000-2007.
- Schellenger Chair Professor and Director, Electronic Devices Laboratory, Department of Electrical and Computer Engineering, Univ. of Texas at El Paso, El Paso, TX, 1993-1999.
- Professor, Department of Electrical and Computer Engineering, Univ. of Texas at El Paso, El Paso, TX, 1990-1999
- Associate Professor of Electrical and Computer Engineering, Univ. of Texas at El Paso, El Paso, TX, 1983- 990.
- President, Photon Energy Inc, El Paso, TX., 1983-1985
- Manager of Materials and Device Research, Photon Power Inc., El Paso, TX, 1981-1983.
- Section Head of Device Development, Photon Power Inc., El Paso, TX, 1980-1981.
- Research Engineer, Photon Power Inc., El Paso, TX, 1976-1980.
- Associate Scientist, Institute of Energy Conversion, University of Delaware, Newark, DE, 1974-1976.
- Research Assistant, Department of Electrical Engineering, University of Minnesota, Minneapolis, MN 1970-1973
- Teaching Assistant, Department of Electrical Engineering, University of Minnesota, Minneapolis, MN 1968-1970

Research Interests and Activities

Nanostructured Device Designs for Solar Cells, Thin Film Solar Cells; Organic Semiconductor Solar Cells; Sensors, Carbon Nanotubes; Sensors; Electroluminescent Display Devices

Representative Publications

- “Nanotube Photovoltaic Configuration for Enhancement of Carrier Generation and Collection” by Hongmei Dang, Vijay P. Singh, Sai Guduru, Suresh Rajaputra and Zhi Chen, *Nano Research*, DOI 10.1007/s12274-015- 0818-7, (2015)
- “Embedded Nanowire Window Layers for Enhancing Quantum Efficiency in Window-Absorber Type Solar Cells”, by Hongmei Dang, Vijay P. Singh*, Sai Guduru, and Jeffery

T. Hastings, *Solar Energy Materials and Solar Cells*, 144 (2016) 641-651,
[DOI:10.1016/j.solmat.2015.09.044](https://doi.org/10.1016/j.solmat.2015.09.044)

- “Nanowire CdS-CdTe Solar Cells with Molybdenum Oxide as Contact”, by Hongmei Dang and Vijay P. Singh, *Scientific Reports*, **5**, Article number 14859 (2015); doi: 10.1038/srep14859 (2015).
- “Cadmium sulfide nanowire arrays for window layer applications in solar cells”, by Hongmei Dang, Vijay Singh, Suresh Rajaputra, Sai Guduru, Jianhao Chen, Bhavananda Nadimpally, *Solar Energy Materials and Solar Cells*, Volume 126, July 2014, pp 184-191
- “Cadmium sulfide nanowires for the window semiconductor layer in thin film CdS–CdTe solar cells”, Piao Liu, Vijay P. Singh, Carlos A. Jarro and Suresh Rajaputra, *Nanotechnology*, 22 (2011) 145304 (9pp)
- “Copper indium diselenide nanowire arrays by electrodeposition in porous alumina templates”, Sovannary Phok, Suresh Rajaputra and Vijay P Singh, *Nanotechnology* 18 (2007) 475601
- “Porous alumina templates and nanostructured CdS for thin film solar cell applications”, Alberto Aguilera, Vivekanand Jayaraman, Srikalyan Sanagapalli, R. Suresh Singh, Visweswaran Jayaraman, Karen Sampson, and Vijay P. Singh, *Solar Energy Materials & Solar Cells*, 90, pp. 713-726, 2006.
- “Design Issues in the Fabrication of CdS-CdTe Solar Cells on Molybdenum Foil Substrates,” Singh, V.P. and J. McClure, *Solar Energy Materials and Solar Cells*, Vol. 76, pp. 369-385 (2002).
- "Analysis of Contact Degradation in CdS-CdTe Heterojunction Solar Cells," V. P. Singh, O. M. Erickson and J.N. Chao, *Journal of Applied Physics*, vol.78, no.7, October 1995, pp. 4538-4542.
- “Characterization of High Photo voltage CuPc- Based Organic Solar Cell Structures”, V.P. Singh, B. Parthasarathy, R.S. Singh, A. Aguilera, John Anthony and M. Payne, *Solar Energy Materials & Solar Cells*, 90, pp. 798-812, 2006 .
- “Copper Phthalocyanine-Based Organic Solar Cells With High Open Circuit Voltage”, V.P. Singh, R. S. Singh, B. Parthasarathy, A. Aguilera, J. Anthony and M. Payne, *Applied Physics Letters*, 86, 082106 1-3, 21 Feb 2005.
- “MWNT-Polymer nanocomposites as highly sensitive and selective room temperature gas sensors“, Raghu Mangu, Suresh Rajaputra, and Vijay P. Singh, *Nanotechnology* 22 (2011) 215502.
- “An Analytical Model for Electron Transport and Luminance in SrS: Cu,Ag ACTFEL Display Devices,” Vijay P. Singh, Praveen Sivakumar, Alberto Aguilera, David C. Morton, and Eric Forsythe. *IEEE Transactions on Electron Devices*, Vol. 51, #3 (March 2004), pp. 357-363.
- ***Some Recent Collaborators and Co-editors***
Todd Hastings, Zhi Chen, Beth Guiton, Janet Lumpp, Larry Holloway;
Graduate Advisor: Prof. A. van der Ziel, University of Minnesota;
Recent Graduate Advisees : Post-Doctoral: Suresh Rajaputra; Sovannary Phok, Albero Aguilera,; ***Graduate Students:*** Hongmei Dang, John Bowie, Piao Liu, Raghu Mangu, Bhavanand Nadimpally, Joshua Church, Karen Sampson, Praveen Sivakumar, Patricia Clore, Mathew Dye, Riasad Azim, Raghav Govindarajan, Rasika Ganvir